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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/602,374 | 06/23/2000 | Jussi Ruutu | 975.305USW1 | 1766 |

32294 7590 05/03/2004

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EXAMINER

LY, ANH VU H

ART UNIT PAPER NUMBER

2667

DATE MAILED: 05/03/2004

23

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/602,374

Applicant(s)

RUUTU ET AL.

Examiner

Anh-Vu H Ly

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4 and 6-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4 and 6-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 02, 2004 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-4, 6-11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bernstein (US Patent No. 5,912,880) in view of Hamamoto et al (US Pub 2002/0034163 A1). Hereinafter, referred to as Bernstein and Hamamoto.

With respect to claims 1, 7, and 9, Bernstein discloses in Fig. 2, a counter 220 for determining N cell (number of samples) arrival events (determining a plurality of actual signal arrival times for a number of samples). Further, Bernstein discloses (see Abstract) a system in a receiver of ATM cells determines an average cell interarrival time (averaging the plurality of actual signal arrival times over the number of samples) by determining the amount of time required (expected signal arrival time) for a predetermined number of cells (over the number of

samples) to arrive. The system then uses the average cell interarrival time to adjust the internal timing of the receiver (correcting a timing of a receiving clock on a basis of an average of the plurality of actual signal arrival times and an expected signal arrival time). Bernstein discloses in Fig. 2, a local internal timing 210 for timing the expected arrival cells (deriving an expected signal arrival time from the receiving clock). Bernstein discloses in Fig. 2, a differentiator 230 and loop filter 240 for determining a difference between the average of arrival times and local time and adjusting the internal timing of the receiver 210 (determining a frequency difference between a frequency corresponding to an average of the plurality of actual signal arrival times and a frequency of the receiving clock and changing the frequency of the receiving clock according to the frequency difference). Bernstein does not disclose wherein the number of samples is set such as time-dependent cell delay variation of actual signals being asynchronously transmitted has a mean value of zero. Hamamoto discloses in Fig. 9, a graph showing the distribution of the cell delay time, wherein the distribution of the cell delay time follows the Poission distribution with a mean value of zero. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the cell delay distribution having a mean value of zero in Bernstein's system, as suggested by Hamamoto, to regulate cell delay in an ATM network.

With respect to claim 3, Bernstein discloses in Fig. 2, a counter 220 for determining N cell arrival events (counting a time period between arrival of a first signal and arrival of a subsequent second signal).

With respect to claim 4, Bernstein discloses in Fig. 4, an interarrival time counter 455 for storing counted time periods and calculating an average (storing counted time periods and calculating an average of store time periods).

With respect to claims 6 and 13, Bernstein discloses a system in a receiver of ATM cells (asynchronous transmission is an ATM transmission and the signal is an ATM cell).

With respect to claim 8, Bernstein discloses in Fig. 4, VCO 440 for controlling internal timing (means for correcting comprises a voltage controlled oscillator).

With respect to claim 10, Bernstein discloses in Fig. 4, buffer register 460 for storing cells (storing a plurality of detected actual signal arrival times).

With respect to claim 11, Bernstein discloses in Fig. 2, an internal timing 210 (means for detecting comprises a timer).

3. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bernstein and Hamamoto in view of Pitio et al (US Patent o. 5,834,980). Hereinafter, referred to as Bernstein, Hamamoto, and Pitio.

With respect to claim 12, Bernstein and Hamamoto have addressed all the limitations recited in independent claim 7. Bernstein does not disclose a phase detector and wherein a polarity of the control signal is changed in accordance with a result of comparison. Pitio

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discloses in Fig 4., VCO bias control circuit 31 controlled by the polarity of the phase detector 41. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a phase detector in Bernstein's timing recovery system, as suggested by Pitio, since phase detector has been applied and used in many applications for controlling the voltage controlled oscillator.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh-Vu H Ly whose telephone number is 703-306-5675. The examiner can normally be reached on Monday-Friday 7:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 703-305-4378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

avl


CHI PHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

4/28/08